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Reserve



FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for
Arizona

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture

Data included in this report were obtained by the agency named above in cooperation with the Federal, State and local organizations listed on the last page of this report.

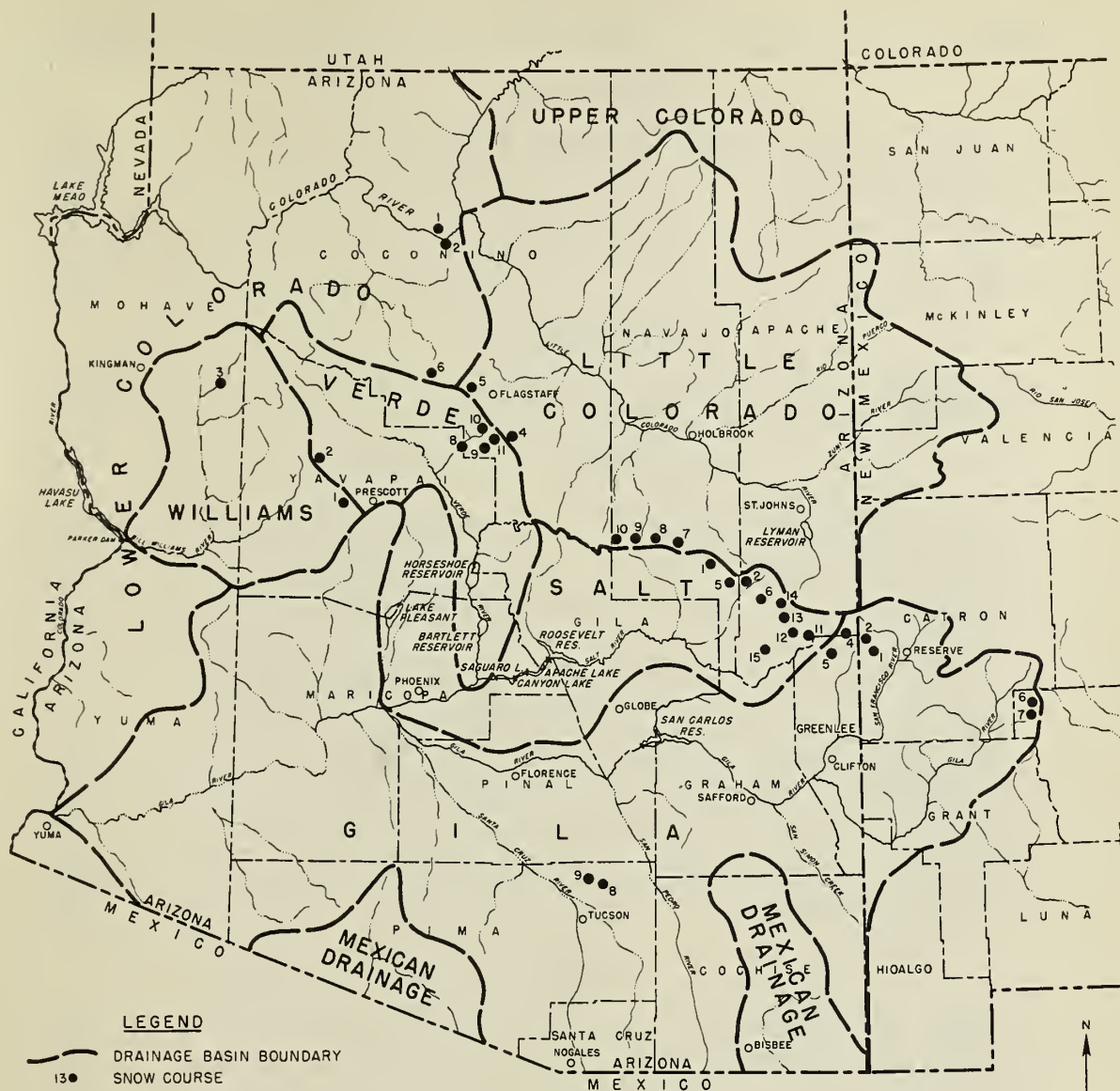
As of
JAN. 15, 1950



FEDERAL-STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
FOR
ARIZONA

Report Prepared
by
Burke Peterson-Irrigation Engineer

Division of Irrigation
Soil Conservation Service
Phoenix, Arizona



INDEX TO SNOW COURSES

NUMBER	NAME	ELEVATION
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LITTLE COLORADO RIVER

1.	Forest Dale	6,000
2.	McNary	7,200
3.	Nutriosio	8,500
4.	Mormon Lake	7,350
5.	Fort Valley	7,350
7.	Gentry	7,600
8.	Heber	7,600
9.	Canyon Creek	7,500
10.	Elk	7,600
11.	Mormon Mountain	7,500

WILLIAMS RIVER

1.	Iron Springs	6,200
2.	Camp Wood	5,700
3.	Willow Ranch	5,000

GILA RIVER

1.	Frisco Divide (N.M.)	8,000
2.	State Line (N.M.)	8,000
3.	Nutriosio	8,500
4.	Coronado Trail	8,000
5.	Beaver Head	8,000
6.	Taylor Creek (N.M.)	7,850
7.	Inman (N.M.)	7,800
8.	Rose Canyon	7,300
9.	Bear Wallow	8,100

VERDE RIVER

1.	Iron Springs	6,200
2.	Camp Wood	5,700
3.	Mingus Mountain	7,100
4.	Morman Lake	7,350
5.	Fort Valley	7,350
6.	Chalender	7,100
8.	Munds Park	6,500
9.	Casner Park	6,930
10.	Antelope Park	7,300
11.	Mormon Mountain	7,500

SALT RIVER

1.	Forest Dale	6,000
2.	McNary	7,200
3.	Nutriosio	8,500
4.	Coronado Trail	8,000
5.	Milk Ranch	7,000
6.	McKay	8,250
7.	Gentry	7,600
8.	Heber	7,600
9.	Canyon Creek	7,500
10.	Elk	7,600
11.	Big Lake Knoll	8,800
12.	Maverick Fork	9,050
13.	Baldy	9,000
14.	Ft. Apache	9,000
15.	Pacheta	7,800

LOWER COLORADO RIVER

1.	Bright Angel	8,400
2.	Grand Canyon	7,500
5.	Fort Valley	7,350
6.	Chalender	7,100

WATER SUPPLY OUTLOOK

Arizona

January 15, 1950

* * * * *

* January 15, 1950 snow surveys show the snow *
* stored water on the principal water sheds of *
* the state to be below normal. Soil moisture *
* conditions on the drainage areas are general- *
* ly good so that with increased snow cover, *
* good runoff will result. As of this date, *
* the over all storage in Arizona reservoirs is *
* twice that of last year. *

* * * * *

Precipitation Below normal precipitation occurred on the Salt and Gila river drainage areas during the period October through December. Precipitation on the Verde watershed was about normal for this same period. Early winter storms along the Verde watershed have left the soil near saturation at higher elevations. Soil moisture conditions along the Salt and Gila River drainage are fair. During the first half of January precipitation over the state has been slightly below normal.

Snow Cover January 15 snow surveys indicate that snow stored water on the Verde drainage is slightly below normal. Snow depths vary from a couple of inches on Mingus Mountain to two feet on Mormon Mountain. The present snow cover on this drainage is melting rapidly. Several new snow courses along the east slope of the Verde drainage will give a clearer picture of the snow condition on the watershed.

Snow stored water on the Salt River drainage is below normal. Snow surveys show there is about two feet of snow in the Big Lake area of Mt. Baldy. In many places near Sheep Springs the roadway has been blown clear of snow. Along the Coronado Trail and the Mogollon Rim there is less than a foot of snow.

Snow stored water on the Gila River watershed is about normal. Snow depths are generally less than one foot. The Santa Catalina Mountains report that snow stored water is 200% of normal and well above last years high.

Snow stored water on the Bill Williams River drainage is below normal. The Little Colorado River's watershed has about normal snow stored water.

The Grand Canyon reports slightly above normal snow stored water. Snow depths vary from 9 inches on the south rim to nearly 3 feet on the north rim.

Runoff October through December 1949 discharge of the Verde River was 140 percent of the normal while for the same period the Salt River ran about 75% of normal. Runoff for the first half of January 1950 has been below normal for both these rivers.

The Gila River had below normal runoff for the period October to December 1949. This trend has continued for the first half of January 1950.

Reservoir Storage Due to the high runoff of last year the reservoirs of Arizona are entering the year 1950 in better condition than they have since 1945. As of January 15, San Carlos contained 90,000 acre feet which is about 50% of normal and three times the amount it held last year on this date. The reservoirs on the Verde are storing 80% of normal or slightly less than they did last year at this time. The Salt River reservoirs are storing about 85% of normal or over twice the amount of water they contained January 15, 1949. Roosevelt Lake has four times the water it had last year at this time. Lake Pleasant contains 6,000 acre feet or slightly less than last year. Lake Havasu is near capacity and Lake Mead is storing 19,466,000 acre feet, slightly less than last year.

TABLE I

ARIZONA SNOW SURVEYS JANUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS									
		Water Content (Inches)					Snow Depth (Inches)				
		Number	Sec.	Twp.	Rge.	Elev.	Date of Survey	1950	1949	1948	Past Record
DRAINAGE BASIN and SNOW COURSE								Same Approx. Date	Years of Record	Avg. Water Content (Inches)	
LITTLE COLORADO RIVER											
Forest Dale	1	2	9N	21E	6000		1/16	0	1.4	0.4	10
McNary	2	14	8N	23E	7200		1/16	2.4	3.3	0.3	10
Nutriosio	3	23	6N	30E	8500		1/16	1.8	4.9	0.7	10
Mormon Lake	4	13	18N	8E	7350		1/15	3.1	10.3	0	3
Fort Valley	5	22	22N	6E	7350		1/15	2.4	6.1	0.4	3
Century	7	36	11N	15E	7600		1/17	3.0		New Course	
Heter	8	28	11N	15E	7600		1/17	2.7		New Course	
Canyon Creek	9	18	11N	15E	7500		1/17	3.4		New Course	
Elk	10	31	11N	14E	7600		1/17	3.5		New Course	
Mormon Mt.	11	14	18N	8E	7500		1/15	4.6		New Course	
GILA RIVER											
Frisco Divide	1	31	6S	20W	8000		1/16	1.7	3.1	1.1	10
State Line	2	6	6S	21W	8000		1/16	1.5	3.5	0.7	10
Nutriosio	3	23	6N	30E	8500		1/16	1.8	4.9	0.7	10
Coronado Trail	4	26	5N	30E	8000		1/16	2.0	6.2	1.2	10
Beaver Head	5	13	4N	30E	8000		1/16	2.8	No Report	1.2	9
Taylor Creek	6	20	10S	10W	7850		1/15	1.1	No Report	0	6
Inman	7	6	11S	10W	7800		1/15	1.3	No Report	0	3
Rose Canyon	8	15	12S	16E	7500		1/15	2.3	0	0	2
Bear Wallow	9	6	12S	16E	8100		1/15	5.7	4.5	0	2



TABLE I

ARIZONA SNOW SURVEYS JANUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS										
		Water Content (Inches)					Past Record					
		Same Approx. Date					Years of Record					
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TABLE I

ARIZONA SNOW SURVEYS JANUARY 15, 1950

LOCATION		SNOW COVER MEASUREMENTS									
		Water Content (Inches)					Snow Depth (Inches)				
		Sum. Approx. date					Years of Record				
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TABLE 2
STATUS OF RESERVOIR STORAGE, January 15, 1950

BASIN and STREAM	RESERVOIR	USABLE CAPACITY (1000 A.F.)	THOUSANDS	ACRE	FEET	IN	STORAGE	About Jan. 15
			1950	1949	1948	1947	10 yr. Avg. 1939-1948	
Agua Fria	Lake Pleasant	179	6	7	1	3	16	
Colorado	Lake Havasu	688	684	592	582	602	523	
Colorado	Lake Mead	27,935	19,446	19,489	20,320	17,603	20,558	
Gila	San Carlos	1,200	90	32	0	14	196	
Verde	Bartlett	179	39	34	5	38	42 ^a	
Verde	Horseshoe	67	2	17	2	10	7 ^b	
Salt	Roosevelt	1,382	363	89	49	167	492	
Salt	Apache	245	192	101	141	191	167	
Salt	Canyon	58	7	12	26	40	27	
Salt	Saguaro	70	22	24	12	15	12	

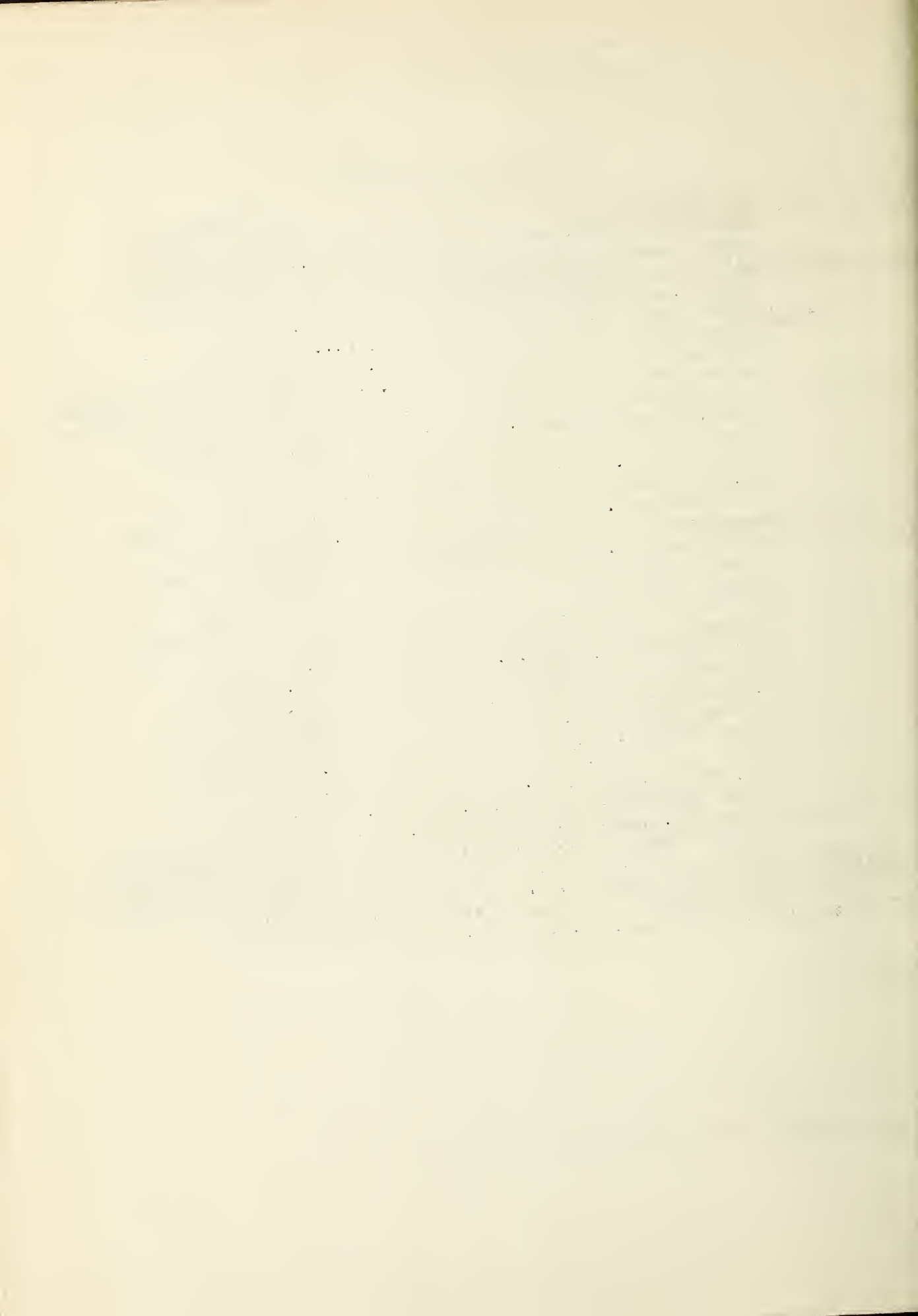
a - Average for years 1941 through 1948

b - Average for years 1946 through 1948



LIST OF SNOW SURVEYORS

<u>SNOW COURSE</u>	<u>SURVEYOR</u>
Elk.....	Gerwitz, Peterson
Canyon Creek.....	Gerwitz, Peterson
Gentry.....	Gerwitz, Peterson
Heber	Gerwitz, Peterson
Forest Dale	W. E. Fair
McNary	W. E. Fair
Milk Ranch	W. E. Fair
Casner Park	Greaves, Gerwitz, Peterson
Munds Park	Greaves, Gerwitz, Peterson
Antelope Park	Greaves, Gerwitz, Peterson
Mormon Mountain	M. F. Greaves
Mormon Lake	M. F. Greaves
Mingus Mountain	H. Linn
Iron Springs	E. Saxby
Camp Wood	Mrs. C. C. Merritt
Willow Ranch	T. Miller
Grand Canyon	Sylvester, James
Bright Angel	Folson
Ft. Valley	A. P. Loska
Chalender	Schroeder, Cravens
Bear Wallow	W. H. Hughes
Rose Canyon	W. H. Hughes
Pacheta	J. Thorsen
Big Lake Knoll	Work, Peterson
Maverick Fork	Work, Peterson
Baldy	Work, Peterson
Ft. Apache	Work, Peterson
Taylor Creek	F. M. Inman
Inman	F. M. Inman
Coronado Trail	Diggs, Leidman, Shumatz
Nutrioso	Diggs, Leidman, Shumatz
State Line	Diggs, Leidman, Shumatz
Frisco Divide	Diggs, Leidman, Shumatz
Beaver Head	Jes Burke



The following organizations cooperate in the Arizona snow survey work:

FEDERAL

Department of Agriculture
Forest Service
Apache Forest
Coconino Forest
Coronado Forest
Gila Forest
Kaibab Forest
Prescott Forest
Sitgreaves Forest
Southwestern Forest and Range Expt.
Station, Fort Valley, Arizona
Soil Conservation Service
Division of Irrigation

Department of Commerce
Weather Bureau
Arizona Section

Department of Interior
Bureau of Reclamation
Region III
Geological Survey
Arizona District
Indian Service
Fort Apache Reservation
National Park Service
Grand Canyon National Park

Gila Water Commissioner
Safford, Arizona

IRRIGATION PROJECTS

Salt River Valley Water Users Association
Phoenix, Arizona

San Carlos Irrigation and Drainage District
Coolidge, Arizona

Southwest Lumber Mills, Inc., McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

Federal - State - Private

COÖPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

"WATER IS THE WEST'S GREATEST RESOURCE"